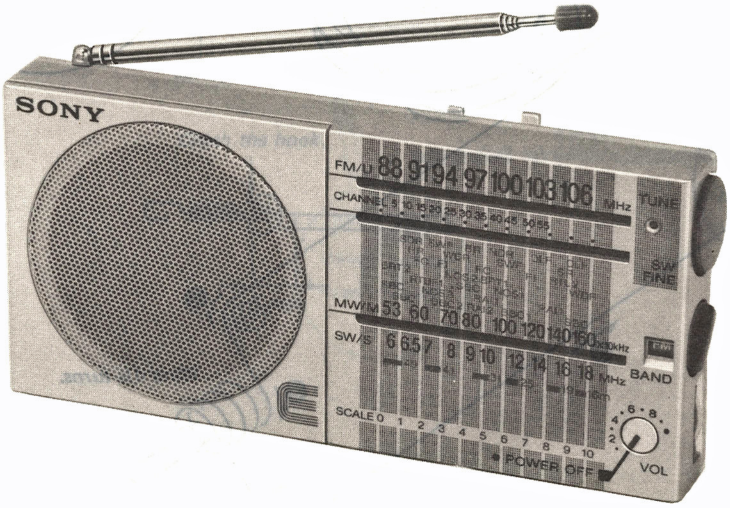
ICF-25

SERVICE MANUAL

Canadian Model
AEP Model
E Model
AUS Model



SPECIFICATIONS

Frequency range	FM: 87.6–107 MHz (for European contries) 87.6–108 MHz (for other countries) MW: 530–1,605 kHz (566–187 m) SW: 5.95–18 MHz (50.4–16.7 m)
Antennas	FM/SW: Telescopic antenna MW: Built-in ferrite bar antenna
Speaker	Approx. 7.7 cm (3 inches) dia.
Power output	200 mW (at 10 % harmonic distortion)
Output	Earphone jack (minijack)
Power requirements	4.5 V dc, three batteries, IEC designation R6 (size AA) DC IN 4.5 V jack accepts:
Battery life	Approx. 35 hours with Sony SUM-3(NS) New Super batteries
Dimensions	Approx. 194 x 92 x 34 mm (w/h/d) (7¾x 3⅝x 1⅜ inches), including projecting parts and controls with the carrying handle pushed in
Weight	Approx. 460 g (1 lb 1 oz), including batteries

FEATURES

- High selectivity and high sensitivity with one chip IC (Integrated Circuit).
- Fine tuning knob for easier tuning in SW reception.
- Two different power sources: batteries and house current.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

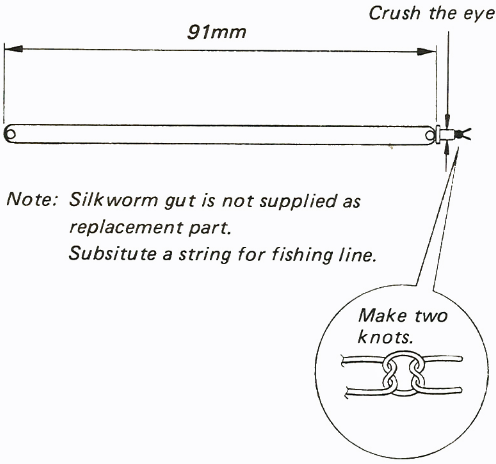
FM/MW/SW
3BAND RECEIVER

SONY®

TR

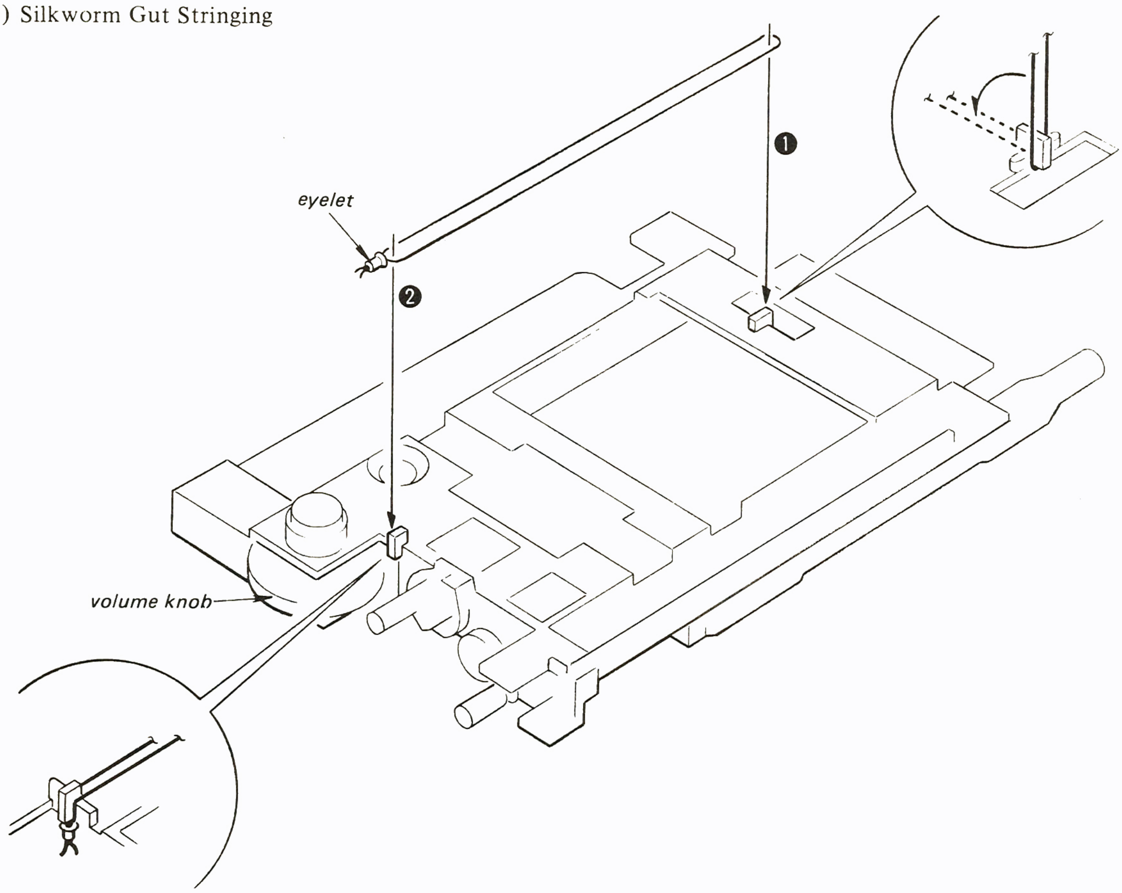
SECTION 1
DIAL CORD STRINGING

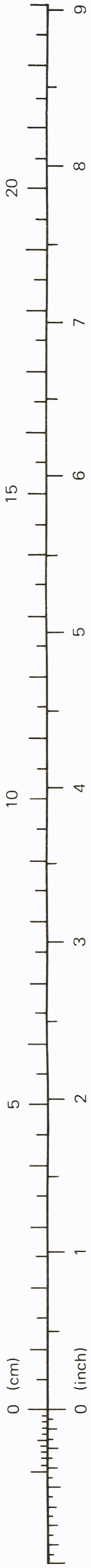
1) Silkworm Gut Preparation

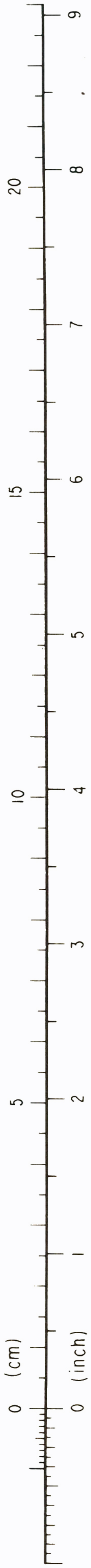

91mm
Crush the eyelet.
Make two knots.

Note: Silkworm gut is not supplied as replacement part.
Subsitute a string for fishing line.

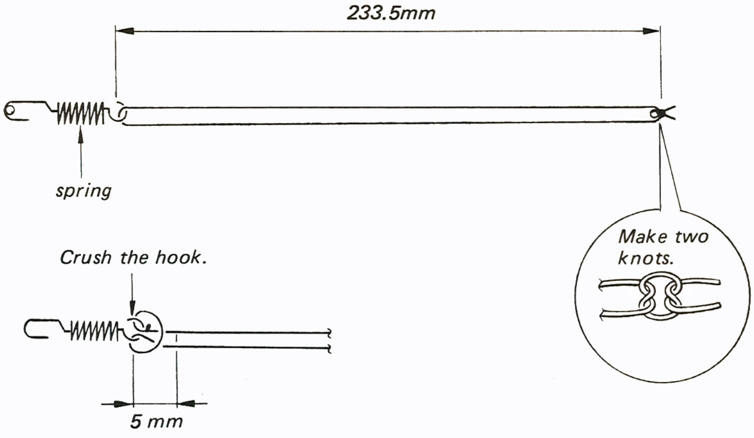
2) Silkworm Gut Stringing


eyelet
❶
❷
volume knob

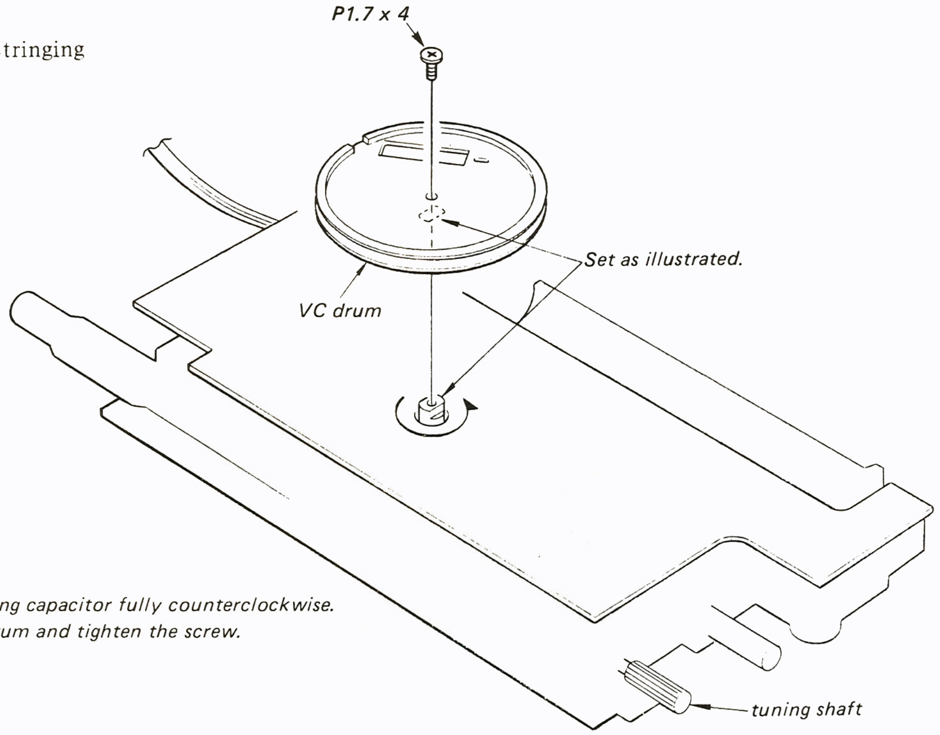

0 (cm)
5
10
15
20
0 (inch)
1
2
3
4
5
6
7
8
9


9
8
20
7
6
15
5
4
10
3
2
5
1
(cm)
(inch)
0
0

3) Dial Cord Preparation

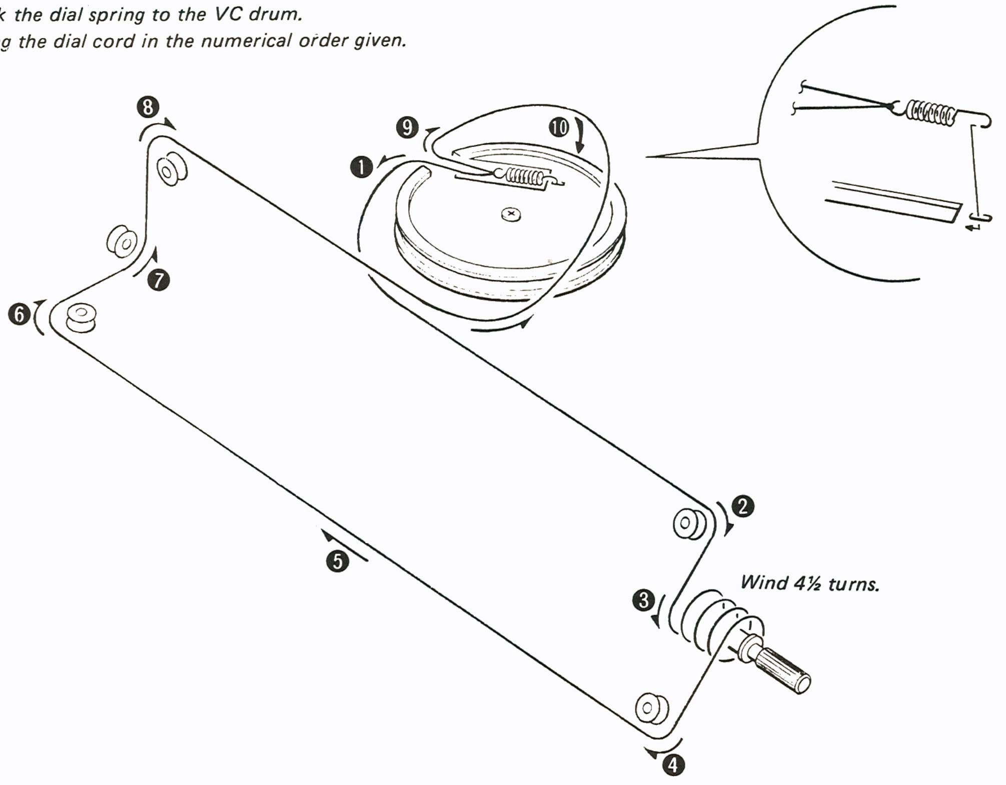

233.5mm
spring
Crush the hook.
5 mm
Make two knots.

4) Dial Cord Stringing


P1.7 x 4
Set as illustrated.
VC drum
tuning shaft

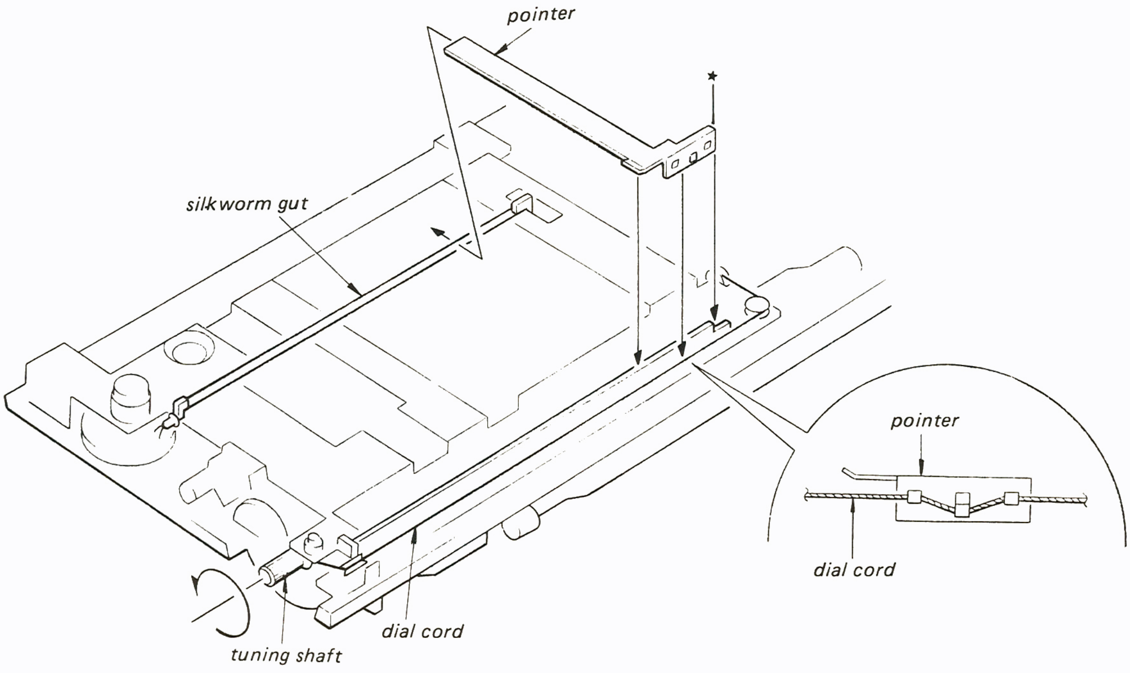
1. *Turn the tuning capacitor fully counterclockwise.*
2. *Set the VC drum and tighten the screw.*

3. *Hook the dial spring to the VC drum.*
4. *String the dial cord in the numerical order given.*


❽
❾
❿
❶
❼
❻
❷
❺
❸
Wind 4½ turns.
❹

5) Pointer Installation

1. *Turn the tuning shaft fully counterclockwise.*
2. *Install the pointer to the dial cord after setting side ★ of the pointer to end of the chassis each other.*

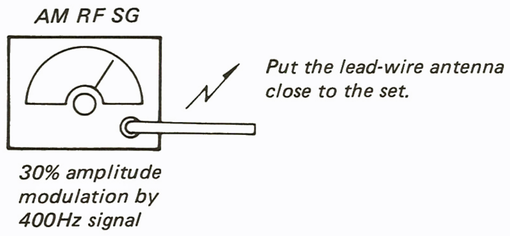

pointer
★
silkworm gut
pointer
dial cord
dial cord
tuning shaft

SECTION 2
ADJUSTMENTS

2-1. AM SECTION

– MW –

- Perform the adjustment in the order of MW.



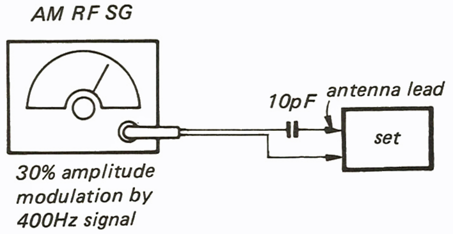
Put the lead-wire antenna close to the set.

30% amplitude modulation by 400Hz signal

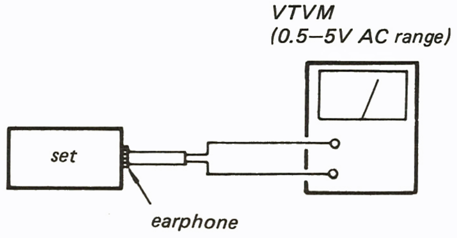
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

– SW –

- SW FINE: center

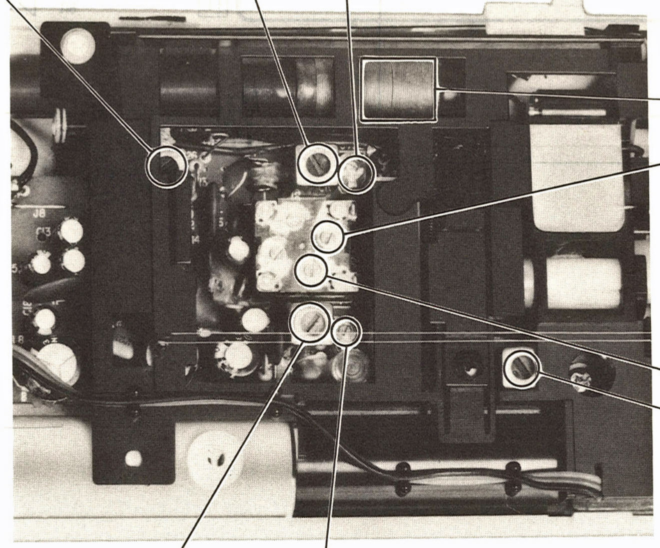


30% amplitude modulation by 400Hz signal



IF ALIGNMENT
Adjust for a maximum reading on VTVM.
455kHz
T1

SW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
5.8MHz	18.5MHz
L3	CT2



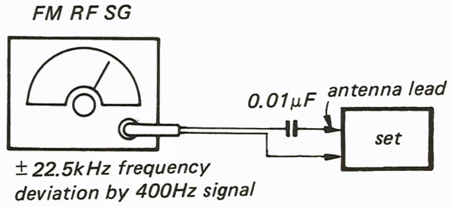
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	620kHz
CT1	1400kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT5	1680kHz
L6	520kHz

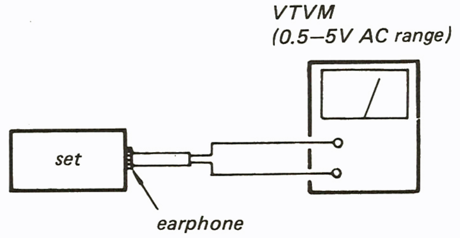
L7	CT6
5.8MHz	18.5MHz
Adjust for a maximum reading on VTVM.	
SW FREQUENCY COVERAGE ADJUSTMENT	

2-2. FM SECTION

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



± 22.5kHz frequency deviation by 400Hz signal

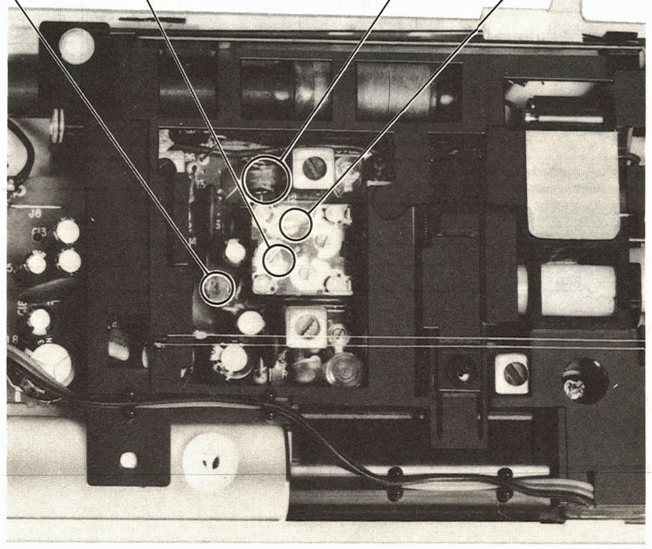


FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
86.5MHz (87.35MHz)	109.5MHz (108 MHz)
L5	CT4

( ): AEP model

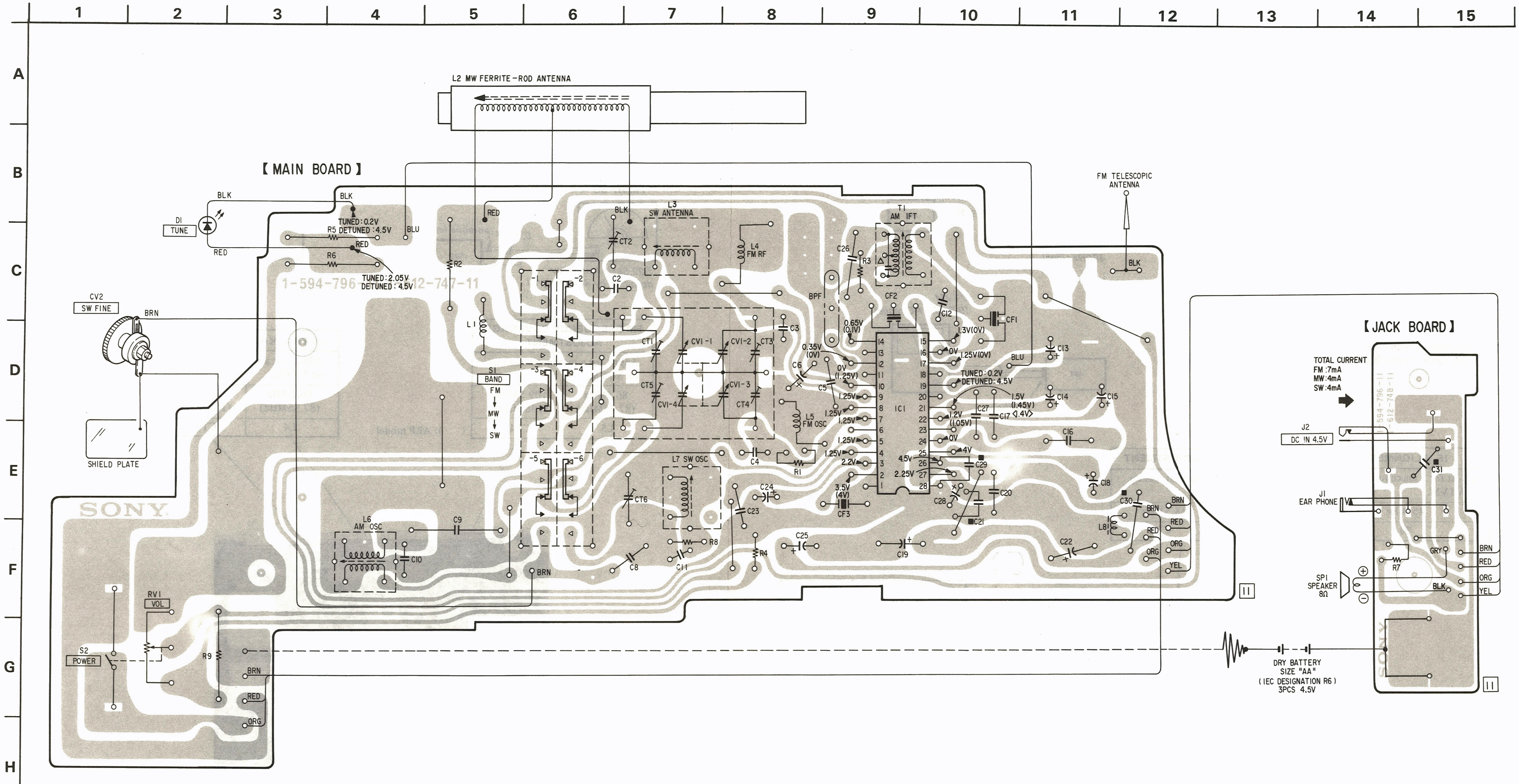
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
86.5MHz (87.35MHz)	109.5MHz (108MHz)
L4	CT3

( ): AEP model



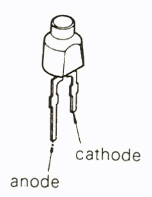
SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM

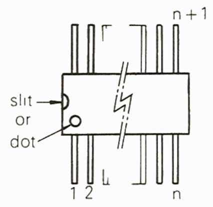

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
L2 MW FERRITE-ROD ANTENNA
【MAIN BOARD】
BLK
D1
TUNE
RED
R5
TUNED: 0.2V
DETUNED: 4.5V
BLU
R6
TUNED: 2.05V
DETUNED: 4.5V
1-594-796
12-747-11
R2
CV2
SW FINE
BRN
SHIELD PLATE
L3
SW ANTENNA
CT2
C2
L4
FM RF
T1
AM IFT
C26
R3
CF2
BPF
C12
CF1
L1
S1
BAND
FM
MW
SW
CT1
CV1-1
CV1-2
CT3
C3
CT5
CV1-4
CV1-3
CT4
C6
C5
L5
FM OSC
IC1
0.35V
(0V)
0.65V
(0.1V)
0V
(1.25V)
1.25V
1.3V(0V)
0V
1.25V(0V)
TUNED: 0.2V
DETUNED: 4.5V
1.5V
(1.45V)
1.2V
(1.05V)
C27
C17
(4V)
C13
C14
C15
C16
C18
C4
R1
L7 SW OSC
CT6
C24
C23
3.5V
(4V)
CF3
4.5V
2.2V
2.25V
4V
C29
C28
C20
C21
C30
L8
C25
C19
C22
R4
R8
C8
C11
L6
AM OSC
C9
C10
SONY
RV1
VOL
S2
POWER
R9
BRN
RED
ORG
YEL
GRY
BLK
FM TELESCOPIC ANTENNA
【JACK BOARD】
TOTAL CURRENT
FM: 7mA
MW: 4mA
SW: 4mA
J2
DC IN 4.5V
C31
J1
EAR PHONE
SP1
SPEAKER
8Ω
R7
DRY BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
3PCS 4.5V
11

- **Semiconductors Lead Layout**

TLR226

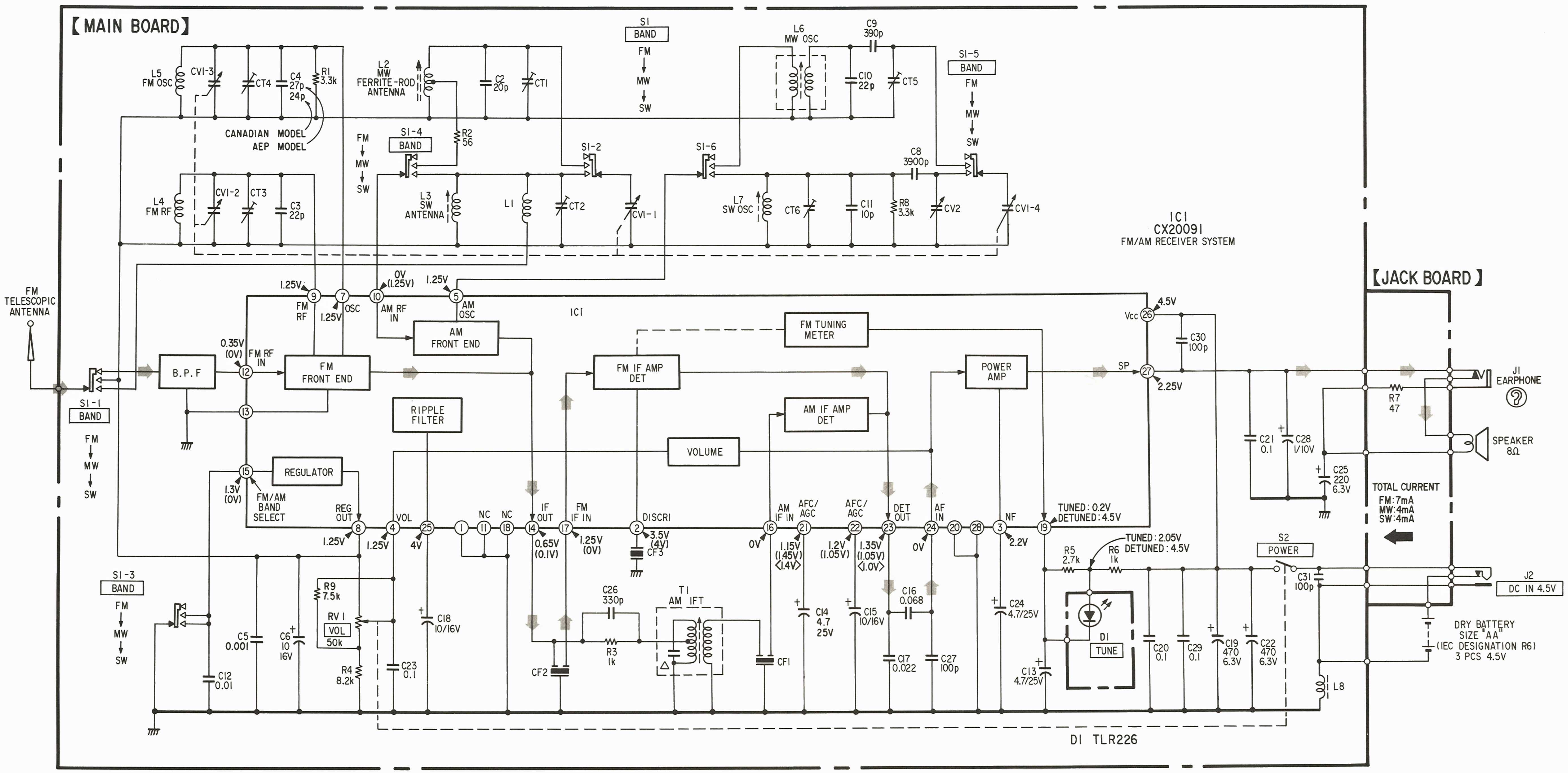

cathode
anode

CX20091


n+1
slit
or
dot
1 2
n

Note:
- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.

3-2. SCHEMATIC DIAGRAM


【MAIN BOARD】
【JACK BOARD】
FM TELESCOPIC ANTENNA
S1-1 BAND FM MW SW
B.P.F
FM FRONT END
AM FRONT END
REGULATOR
RIPPLE FILTER
VOLUME
FM IF AMP DET
FM TUNING METER
AM IF AMP DET
POWER AMP
IC1
IC1 CX20091 FM/AM RECEIVER SYSTEM
L5 FM OSC
CV1-3
CT4
C4 27p 24p
R1 3.3k
CANADIAN MODEL
AEP MODEL
L4 FM RF
CV1-2
CT3
C3 22p
L2 MW FERRITE-ROD ANTENNA
C2 20p
CT1
S1-4 BAND FM MW SW
R2 56
L3 SW ANTENNA
L1
CT2
S1-2
CV1-1
S1 BAND FM MW SW
L6 MW OSC
C9 390p
C10 22p
CT5
S1-5 BAND FM MW SW
S1-6
L7 SW OSC
CT6
C11 10p
R8 3.3k
C8 3900p
CV2
CV1-4
1.25V
0.35V (0V)
FM RF IN
FM RF
OSC
0V (1.25V)
AM RF IN
AM OSC
Vcc
4.5V
C30 100p
SP
2.25V
1.3V (0V)
FM/AM BAND SELECT
REG OUT
VOL
NC
IF OUT
FM IF IN
DISCRI
AM IF IN
AFC/AGC
DET OUT
AF IN
NF
TUNED: 0.2V DETUNED: 4.5V
1.25V
4V
0.65V (0.1V)
1.25V (0V)
3.5V (4V)
CF3
0V
1.15V (1.45V) ⟨1.4V⟩
1.2V (1.05V)
1.35V (1.05V) ⟨1.0V⟩
2.2V
S1-3 BAND FM MW SW
C12 0.01
C5 0.001
C6 10 16V
R9 7.5k
RV1 VOL 50k
R4 8.2k
C23 0.1
C18 10/16V
C26 330p
R3 1k
CF2
T1 AM IFT
CF1
C14 4.7 25V
C15 10/16V
C16 0.068
C17 0.022
C27 100p
C24 4.7/25V
C13 4.7/25V
R5 2.7k
R6 1k
TUNED: 2.05V DETUNED: 4.5V
D1 TUNE
C20 0.1
C29 0.1
C19 470 6.3V
C22 470 6.3V
S2 POWER
C31 100p
L8
D1 TLR226
C21 0.1
C28 1/10V
C25 220 6.3V
R7 47
J1 EARPHONE
SPEAKER 8Ω
TOTAL CURRENT FM: 7mA MW: 4mA SW: 4mA
J2 DC IN 4.5V
DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 3 PCS 4.5V

Note:

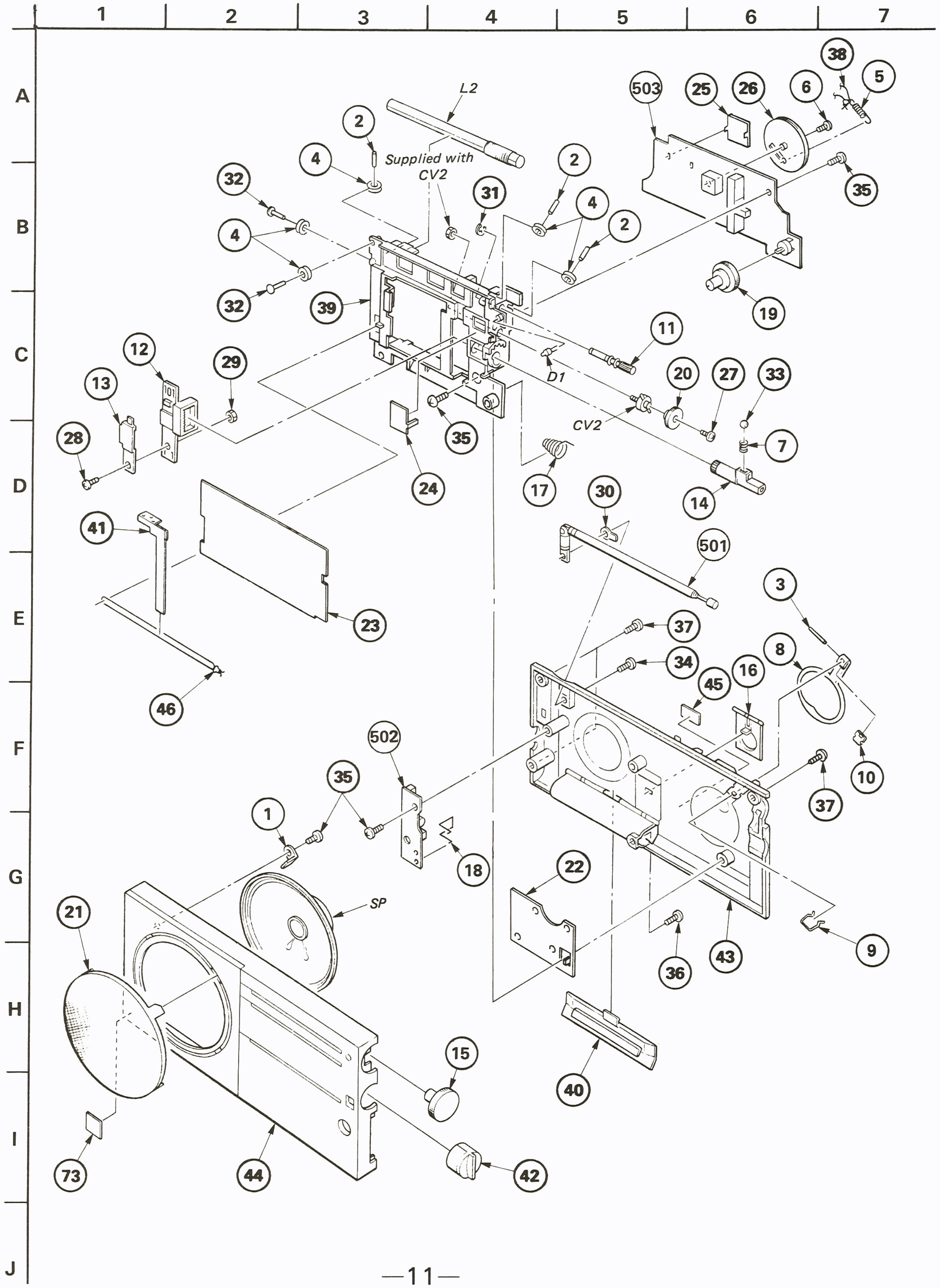
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- △ : internal component.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM.

No mark : FM
( ) : MW
< > : SW

- Voltage variations may be noted due to normal production tolerances.
- ➡ : Signal Path

Note: Voltages are measured with a VOM (50kΩ/V).

SECTION 4
EXPLODED VIEW AND PARTS LIST



GENERAL SECTION

No.	Part No.	Description
1	3-593-019-00	CLAW, SPEAKER
2	3-703-358-01	PIN, PARALLEL (DIA. 2X5)
3	3-703-358-08	PIN, PARALLEL (DIA. 2X20)
4	3-881-911-00	PULLEY
5	3-881-923-00	SPRING
6	7-627-552-47	SCREW (1.7X4)
7	3-890-231-00	SPRING, COMPRESSION
8	3-892-803-01	HANDLE
9	3-892-804-01	SPRING
10	3-892-805-01	STOPPER, HANDLE
11	3-892-806-01	SHAFT, TUNING
12	3-892-807-01	SLIDER
13	*3-892-808-01	ADJUSTOR
14	*3-892-809-01	SELECTOR, BAND
15	3-892-814-01	(SILVER)... KNOB, TUNING
15	3-892-814-21	(VIOLET)... KNOB, TUNING
16	3-892-817-01	STAND
17	3-892-818-01	SPRING
18	3-892-819-01	TERMINAL, BATTERY
19	3-892-820-01	KNOB, CONTROL
20	3-892-821-01	KNOB, F.T
21	3-893-102-01	(SILVER)...GRILLE, SPEAKER
21	3-893-102-11	(VIOLET)...GRILLE, SPEAKER
22	*3-893-106-01	PLATE (A), SHILD
23	*3-893-104-01	PLATE, BACK, DIAL
24	*3-893-105-01	PLATE (C), SHIELD
25	*3-893-107-01	PLATE (B), SHIELD
26	3-893-108-01	DRUM, VC
27	7-621-772-00	SCREW +P 2X4
28	7-621-775-40	SCREW +B 2.6X8
29	7-622-207-05	N 2.6, TYPE 2
30	7-623-508-01	LUG, 3
31	7-624-106-04	STOP RING 3.0, TYPE -E
32	7-625-712-40	RIVET 2X5
33	7-671-156-01	BALL, STAINLESS
34	7-682-548-04	SCREW +B 3X8
35	7-685-147-19	SCREW +BTP 3X10 TYPE2 N-S
36	7-685-547-14	SCREW +BTP 3X10 TYPE2 N-S
37	7-685-549-14	SCREW +BTP 3X14 TYPE2 N-S
38	9-911-825-32	STRING, TETRON DIAL (0.3)
39	3-893-109-01	CHASSIS
40	X-3892-809-1	BATTERY LID ASSY
41	X-3892-810-1	POINTER ASSY

GENERAL SECTION

No.	Part No.	Description
42	X-3893-102-1	(SILVER)...KNOB, BAND ASSY
42	X-3893-103-1	(VIOLET)...KNOB, BAND ASSY
43	X-3893-114-1	CABINET ASSY, REAR
44	X-3893-101-1	(AEP;SILVER)...CABINET ASSY, MAIN
44	X-3893-104-1	(AEP;VIOLET)...CABINET ASSY, MAIN
44	X-3893-105-1	(E;SILVER).......CABINET ASSY, MAIN
44	X-3893-106-1	(E,AUS;VIOLET)...CABINET ASSY, MAIN
44	X-3893-107-1	(Canadian;SILVER)...CABINET ASSY, MAIN
44	X-3893-108-1	(Canadian;VIOLET)...CABINET ASSY, MAIN
45	*3-703-593-01	(AEP)....LABEL, FTZ
46	*7-623-605-01	EYELET 1.3X2.5

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
71	⚠.1-463-331-11	(Canadian)....ADAPTOR, AC
71	⚠.1-463-534-11	(AEP).........ADAPTOR, AC
72	3-701-316-00	(VIOLET)...LABEL, COLOR
72	3-703-729-00	(SILVER)...LABEL, COLOR
73	3-703-710-01	STICKER, SONY SYMBOL (12)
74	3-893-113-01	CUSHION
75	3-893-114-01	(AEP,Canadian)...INDIVIDUAL CARTON (WITH AC ADAPTOR)
75	3-893-115-01	(AEP,E,AUS)......INDIVIDUAL CARTON
76	3-893-124-01	CASE, ADAPTOR
77	3-985-622-61	MAT, MIRROR
78	3-995-995-11	(AEP,Canadian,E,AUS)...MANUAL, INSTRUCTION
78	3-995-995-41	(AEP)......MANUAL, INSTRUCTION
79	3-985-622-41	SHEET, PROTECTION (FOR AC ADAPTOR)
80	3-893-123-01	(Canadian)...SLEEVE AC-120 (FOR AC ADAPTOR)
80	3-893-124-01	(AEP)........SLEEVE AC-450 (FOR AC ADAPTOR)

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

COILS

- MMH : mH, UH : µH

SEMICONDUCTORS

In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC,
UPD···: µPD···

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	1-501-222-21	ANTENNA, TELESCOPIC			
502	*1-612-748-11	PC BOARD, JACK			
503	*A-3660-502-A	PC BOARD ASSY, MAIN			
BPF	1-235-171-00	FILTER, BAND PASS			
C2	1-102-958-00	CERAMIC	20PF	5%	50V
C3	1-102-959-00	CERAMIC	22PF	10%	50V
C4	1-102-672-00	(Canadian)...CERAMIC	24PF		
C4	1-102-883-00	(AEP)........CERAMIC	27PF	5%	50V
C5	1-102-074-00	CERAMIC	0.001MF	10%	50V
C6	1-123-356-00	ELECT	10MF	20%	16V
C8	1-103-739-00	POLYSTYRENE	0.0039MF	5%	50V
C9	1-103-715-00	POLYSTYRENE	390PF	5%	50V
C10	1-102-967-00	CERAMIC	22PF	5%	50V
C11	1-102-285-00	CERAMIC	10PF	0.5PF	50V
C12	1-161-013-00	CERAMIC	0.01MF	10%	25V
C13	1-123-369-00	ELECT	4.7MF	20%	25V
C14	1-123-369-00	ELECT	4.7MF	20%	25V
C15	1-123-356-00	ELECT	10MF	20%	16V
C16	1-161-023-00	CERAMIC	0.068MF	10%	25V
C17	1-161-055-00	CERAMIC	0.022MF	10%	25V
C18	1-123-356-00	ELECT	10MF	20%	16V
C19	1-123-298-00	ELECT	470MF	20%	6.3V
C20	1-161-974-00	CERAMIC	0.1MF	0	16V
C21	1-161-974-00	CERAMIC	0.1MF	0	16V
C22	1-123-298-00	ELECT	470MF	20%	6.3V
C23	1-161-974-00	CERAMIC	0.1MF	0	16V
C24	1-123-369-00	ELECT	4.7MF	20%	25V
C25	1-123-308-00	ELECT	220MF	20%	6.3V
C26	1-102-112-00	CERAMIC	330PF	10%	50V
C27	1-102-973-00	CERAMIC	100PF	5%	50V
C28	1-131-418-00	ELECT(SOLID)	1MF	20%	10V
C29	1-161-974-00	CERAMIC	0.1MF	0	16V
C30	1-102-975-00	CERAMIC	100PF	10%	50V
C31	1-102-975-00	CERAMIC	100PF	10%	50V
CF1	1-527-870-00	FILTER			
CF2	1-567-051-61	FILTER, CERAMIC (FM)			
CF3	1-567-051-61	FILTER, CERAMIC (FM)			
CT2	1-141-257-00	CAP, TRIMMER			
CT6	1-141-232-00	CAP, TRIMAR 11PF			
CV2	1-141-295-11	CAP, TRIMMER (FINE TUNING)			
D1	8-719-812-26	DIODE TLR226			
IC1	8-752-009-10	IC CX20091			

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
J1	1-507-398-00	EARPHONE JACK			
J2	1-507-459-00	JACK			
L1	*1-401-495-11	LOADING ANTENNA COIL			
L2	1-402-106-11	ANTENNA, FERRITE-ROD (MW)			
L3	1-402-073-11	COIL, ANT (SW)			
L4	*1-422-149-00	(AEP)........COIL, AIR-CORE			
L4	*1-422-184-11	(Canadian)...COIL, AIR-CORE			
L5	1-422-121-00	(AEP)........COIL, FM OSCILLATION			
L5	1-422-131-00	(Canadian)...COIL, FM OSCILLATION			
L6	1-406-092-11	COIL, OSC (MW)			
L7	1-406-093-11	COIL, OSC (SW)			
L8	1-421-659-11	COIL, CHOKE 20UH			
R1	1-247-143-00	CARBON	3.3K	5%	1/4W
R2	1-247-101-00	CARBON	56	5%	1/4W
R3	1-246-473-00	CARBON	1K	5%	1/4W
R4	1-247-153-00	CARBON	8.2K	5%	1/4W
R5	1-247-141-00	CARBON	2.7K	5%	1/4W
R6	1-246-473-00	CARBON	1K	5%	1/4W
R7	1-246-441-00	CARBON	47	5%	1/4W
R8	1-247-143-00	CARBON	3.3K	5%	1/4W
R9	1-247-152-00	CARBON	7.5K	10%	1/4W
S1	1-554-901-11	SWITCH, BAND SLIDE			
SP	1-503-369-11	SPEAKER			
T1	1-404-341-00	TRANSFORMER, IF			
VC1	1-151-463-11	CAP, TUNING, POLYETHYLENE			
VR1	1-230-363-11	RES, VAR, CARBON (WITH SW) 50K			

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

COILS

- MMH : mH, UH : µH

SEMICONDUCTORS

In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC,
UPD···: µPD···

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

English
84E0467-1
Printed in Japan
© 1984

Sony Corporation